IN THE CLAIMS:

1.   (previously amended) A method for routing packets on a linear array of N processors connected in a nearest neighbor configuration, comprising the steps of:

for each end processor of the array, connecting unused outputs to corresponding unused inputs so as to create a plurality of wrapped paths; and

for each axis required to directly route a packet from a source to a destination processor,

determining whether a result of directly sending a packet from an initial processor to a target processor is less than or greater than N/2 moves, respectively, the initial processor being the source processor in a first axis, the target processor being the destination processor in a last axis;

directly sending the packet, when the result is less than N/2 moves; and

indirectly sending the packet so as to follow at least one of the wrapped paths, when the result is greater than N/2 moves.

2.   (currently amended) The method according to claim 1, wherein packets are routed along the x-axis, and then the y-axis, and finally the z-axis.

3.   (original) The method according to claim 1, further comprising the step of randomly sending the packet using either of said sending steps, when the result is equal to N/2 moves and N is an even number.

4.   (original) The method according to claim 1, wherein said indirectly sending step comprises the step of initially sending the packet in an opposing direction with respect to the target processor, wrapping around a first end processor, proceeding to and wrapping around a second end processor, and proceeding to the target processor.

5.   (original) The method according to claim 1, further comprising the step of the target processor receiving the packet upon a second pass thereby, when the packet is sent indirectly.

6.   (original) The method according to claim 1, further comprising the step of adding a 0-bit or a 1-bit to the packet, depending on whether the packet is to be injected into a corresponding axis in the positive or the negative direction, respectively.

7.   (original) The method according to claim 6, wherein the packet can only be removed when traveling in the positive direction, if the 0-bit is added thereto.

8.   (original) The method according to claim 6, wherein the packet can only be removed when traveling in the negative direction, if the 1-bit is added thereto.

9.   (original) The method according to claim 6, further comprising the step of placing the packet in a first queue or a second queue, depending on whether the 0-bit or the 1-bit is added to the packet, respectively.

10- 21. (cancelled)